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ABSTRACT

Rural schools in Utah responded to state and local calls for school reform by implementing Outcome Based Education (OBE) programs beginning in March 1984. Significant improvements in learning have occurred as measured by test scores. Workshops introduced rural educators to OBE which provided a philosophical and operational framework for school improvement. Rural educators were receptive to proposed changes and resources to implement OBE came from the state legislature, state board of education, and the Far West Laboratory. Regional service centers, districts, and state agencies provided leadership and organized a cooperative approach resulting in higher quality planning, better and more efficient activities, and more efficient utilization of resources. This cooperation was the most necessary and valuable part of the school improvement process. A 2-page description of OBE is appended which lists enabling factors and philosophical and operational essentials of the approach and outlines the elements and principles of the OBE Math Program in one Utah high school. A one-page directory of contacts for getting started in OBE is also provided. (LFL)

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REPORT ON UTAH'S RURAL SCHOOLS

A Presentation to the
RURAL EDUCATION ASSOCIATION

October 14, 1985

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REPORT ON UTAH'S RURAL SCHOOLS

A Presentation to the
RURAL EDUCATION ASSOCIATION
October 14, 1985

Today's presentation can be only considered a summary, and will seek to make the following points:

(1) significant improvements are occurring in Utah's rural schools; and

(2) several major elements have combined to achieve this success, including resources provided by the Legislature; and

I. WHAT'S HAPPENING IN UTAH'S RURAL SCHOOLS!!

A. HISTORICAL OVERVIEW -- LOOK WHAT'S HAPPENING!!

Are you aware of the quiet revolution that's been happening in many of our rural schools during the last seventeen months? In March 1984 the first of Utah's Outcome-Based Education workshops was held in Moab. What has happened since has in a sense been been revolutionary, with results that could not have been predicted. Dr. Bill Spady, Director of the Far West Lab, and Carla Santorno, now Principal of Jefferson Elementary in Denver, sparked the revolution, with the assistance of several USOE staff members, the staff from the Southeastern Service Center, and nearly a hundred educators from the schools of that region. Before that first workshop was over, there was a resolve in the minds of many who were there to bring about school improvement for the benefit of the children in rural Utah. Changes in Grand County Schools started there when Superintendent Bill Meador buttonholed Bill Spady and arranged for a June workshop in his district. The changes in Whitehorse High School and the changes in a number of other schools started there. What happened in Moab seventeen months ago has resulted in significant improvements in every one of the forty schools of Southeastern Utah.

The excitement about OBE that came out of Moab resulted in similar workshops being held for the other three rural regions. It also resulted in last year's Rural Schools Workshop being focused totally on Outcome-Based Education. In November of last year, and again in January of this year, two national OBE conferences were held in Salt Lake City for both rural and urban districts. Most educators, and some others, were introduced to OBE at one or more of these workshops or conferences. The 1985 Rural Schools Workshop, held at Snow College August 5-9, was also totally focused on Outcome-Based Education.

These large group workshops and conferences have been stimulating and helpful, but there have also been a lot of related activities taking place, the most notable being the Mastery Learning training that Carol Barber has conducted. Carol is a national consultant on Mastery Learning; before moving to her present location in Houston she served in Denver as Director of the first federally-funded Mastery Learning project and later the Principal of a

Mastery Learning school. She's accomplished a lot, through her classroom experience and knowledge and her quiet, contagious enthusiasm, to build an interest in OBE throughout rural Utah. We don't know just how many she's trained, but over 100 Utah educators have completed the requirements to receive certificates as Mastery Learning Trainers.

But the most exciting things that have happened have been the changes in some rural schools. Let us tell you briefly about some of them.

B. EXAMPLES OF WHAT'S HAPPENING

GRAND COUNTY SCHOOLS

Teachers at **Grand High School** and **Grand Middle School** started work on OBE in June 1984, and moved into OBE Math and Language Arts when school started last August. School board members, educators, and the public are sold on the program. One high school student, however, commented that students don't like OBE because they have to work harder. But, she added, they do learn more.

CTBS scores covering the eight-month instructional period from September to May verify that students do learn more. While they sometimes showed a growth of 1 percentile point in non-OBE subject, OBE Math and Language Arts scores showed growth on the total batteries, by grade, to average 9 1/2 percentile points, with a range as high as 19 percentile points.

NORTH SANPETE SCHOOLS

At last year's Rural Schools Workshop, North Sanpete educators picked up the OBE math developed by Steve Rubin at New Canaan, Connecticut. They adapted it, and started using it in **Fountain Green Elementary** and **Moroni Middle School**, using Mastery Learning as the instructional approach. These programs have been formally evaluated by a team from Snow College, with generally positive conclusions.

For example, when Fountain Green Elementary teachers were interviewed in May, they were reported as "enthusiastic in every case. They had seen irrefutable evidence of increased student progress, enthusiastic student acceptance, and overwhelming parent support." All parents who were interviewed were also reported as being positive about the program.

The evaluators concluded that "the most promising aspect of the program has been the verifiable progress shown by the comparison of pre and post-CAT test scores. The Moroni Middle School showed an increase of 10.91 percentile rankings overall and showed 18.5 months increase over the eight-month period of instruction. Scores at the Fountain Green Elementary showed an increase of 30.99 percentile rankings and 20 months increase over the same eight-month period."

EMERY COUNTY SCHOOLS

Teachers at **Book Cliff Elementary School** in Green River have really worked hard developing a Math curriculum in the form of Mastery Learning units and correlating them with the State Core Curriculum Standards. They've also started on the Reading curriculum. They weren't supposed to actually start using these curriculums until this coming year, but they managed to get about three months in on the Math curriculum using Mastery Learning processes.

Students were given the CTBS in January 1985 and again in April 1985, and showed growth in math achievement during that period of:

4th grade, average of all students	1.82 years
5th grade, average of all students	2.8 years
6th grade, average of all students	2.14 years

Stewart Behling, Ferron Elementary School, has been using aligned curriculum, Mastery Learning with a mastery level of 80-90%, and other outcome-based techniques. The scores of his class are very impressive:

	National Norm	District Average	School Average	Behling Average
Reading	6.90	8.10	7.60	8.70
Language	6.90	7.70	8.10	9.20
Math	6.90	8.20	7.69	10.90
Spelling	6.90	7.30	6.40	7.30
Total	6.90	8.00	7.70	9.10

Huntington Elementary School took students who would normally have had considerable difficulty in learning, and who were distractors in regular classrooms, and formed them into a pre-first-grade class and a pre-second-grade class. They used Mastery Learning and focused their activities on outcomes. These students didn't blow the tops off anything, but they did come up almost to the district averages -- and that may be the most impressive achievement of any being reported here.

IRON COUNTY SCHOOLS

Escalante Valley Elementary School has been putting in some of the elements of an Outcome-Based approach for three years, although they weren't calling it OBE at first. They're using aligned curriculum, teaching to an objective, Mastery Learning, and other methods. In 1981, the CAT average for all students was 3.5 months below grade level. Last year, the CAT average for all students had climbed to 1 year and 1 month above grade level; and this year, using the CTBS, the average of all students was 1 year and 8 months above grade level.

SAN JUAN COUNTY SCHOOLS

Whitehorse High School has almost 400 students, 98% of them Navajo. Initiated by Math department chairman Gary Guymon, they developed an OBE general math program after the Moab OBE workshop in March 1984. They have more OBE elements in place than any other school in Utah, to the best of our knowledge. They didn't know it couldn't be done that fast (lots of people say it can't), so they went ahead and did it.

Tested in September and again in February, students made an average growth of 1.04 grades in that five-month period. Year-end testing was done with a different test, and the scores cannot be directly compared.

SOUTH SANPETE SCHOOLS

At **Gunnison Valley Elementary School**, Benchmark Skills and Mastery Learning were used. In one year, they made percentile gains by classes ranging from 10 points to 25 points.

CARBON COUNTY SCHOOLS

Petersen Elementary School in Sunnyside went from an average of 35 percentile to 60-70 percentile over a period of three years, most of it during this past year.

II. WHY IT HAS HAPPENED

A. CLIMATE

1. **National** studies and calls for school reform.

2. Calls for reform within **Utah** -- from the Legislature, State Board of Education, and others.

3. **Public** requests for school improvement.

B. LEADERSHIP

1. **Regional Service Centers** -- leadership in bringing new ideas and in organizing inservice experiences to learn about the new ideas.

2. **Districts** -- leadership in organizing reform activities within the district and in supporting reform efforts.

3. **State Board of Education/State Office of Education** -- leadership in providing financial support, in developing core curriculum, and in other related actions.

C. PROGRAM AVAILABILITY

1. **OUTCOME-BASED EDUCATION** -- providing a framework, with a basic approach and basic philosophical guidelines.

2. **Programs incorporating research results** -- programs which have incorporated the findings of research on school effectiveness; programs which have proved their effectiveness in producing greater learning achievement. This includes such programs as:

   Mastery Learning
   Essential Elements of Instruction (or, Clinical Teaching; Mastery Teaching; etc.)
   Clinical Supervision
   Assertive Discipline
   Precision Teaching
   Learning Styles
   Cooperative Learning
   and others

D. READINESS

A major element in the success of rural schools has been the readiness of rural educators to receive ideas for school improvement. It is very impressive to realize that our schools are in the hands of persons who are so desirous of providing high quality education for our young people, and who are so dedicated that they will do the hard work and expend the effort required to achieve that high quality.

E. RESOURCES

The resources necessary to the accomplishments cited have come from several sources, including:

1. **Legislature**: special funding provided by the Legislature has been very helpful, including such funds as:
   - Productivity
   - Outcome-Based Education
   - Inservice
   - Career Ladders

2. **State Board of Education**: resources from the State Office of Education have included not only the administration of funds provided by the Legislature, but also significant assistance provided by State Office staff. Also helpful in assisting with the definition of outcomes is the core curriculum developed by State Office staff.

3. **Far West Laboratory**: the Far West Lab, San Francisco, has provided funding for inservice activities, as well as the assistance of several key staff members, including the Lab's Director.

F. COOPERATION

In some ways, the most critical and most valuable element of all has been the cooperative approach which has permeated the entire process. The first workshop, held in Moab, was jointly sponsored and operated by the four Southeastern school districts, by the Southeastern Education Service Center, by the State Office of Education, and by Far West Laboratory. Virtually every related activity since has incorporated a similarly high degree of cooperation.

Cooperation at every level is needed for achieving the highest quality in education, from the individual classroom and school to statewide. Utah, a state with a proud heritage of cooperation, has seen a strengthening of cooperative activities in its rural schools over the past couple of years.

Results of cooperative planning include:

1. **Higher quality planning.** This year, multi-regional planning has been initiated which includes correlation and coordination of planning for support to all rural districts.

2. **Activities which are better and more effective. One example is the recent Rural Schools Workshop, held August 5-9, 1985.**

   We are now planning on OBE Institute of several weeks to be held at Brian Head resort in the summer of 1986.

3. **Improved efficiency**, through the joint utilization of resources.

OUTCOME-BASED EDUCATION

DEFINITION

Outcome-Based Education (OBE) is a wholistic approach to school improvement in which the school community cooperatively defines student learning outcomes, then applies the best research findings to improve all learning related aspects of the school in order to assure achievement of those outcomes.

EFFECTIVENESS ELEMENTS IN A COMPREHENSIVE APPROACH

A number of lists have been developed to specify elements in school effectiveness. From these and from firsthand experience, the **elements of effectiveness** have been synthesized into the following list:

PRIMARY ENABLING FACTORS

1. **Leadership**, at all levels, with the vision and competencies to lead to excellence.
2. **Planning**, utilizing an approach known as Comprehensive Educational Planning, and involving structures and processes for achieving communication, cooperative program design and decision making; and utilizing broad-based participation and the technologies available for effective planning.
3. **Community Participation**, for cooperative planning and action, for contributions, and for ownership in the school program.

INSTRUCTIONAL FACTORS

4. A **Climate** which is conducive to effective learning.
5. **Development of Aligned Curriculum**, to support aligned instruction.
6. An **Instructional Delivery System** -- grouping, assignments, scheduling, and similar arrangements -- which contributes to effective learning.
7. **Instruction** which incorporates Mastery Learning and practices which can be integrated with Mastery Learning.
8. **Assessment and Monitoring** which provides testing for certifying achievement and awarding credit; and provides tracking, with immediate feedback for the student's information and for planning.
9. **Staffing and Staff Training**, for achieving desired learning outcomes.
10. **Logistical Support**, to contribute to achieving desired outcomes -- facilities, equipment and furnishings, instructional-learning materials, and so on.

The philosophical principles and operational essentials below are from the Network for Outcome Based Schools, except for those portions in bold print, which we have added.

PHILOSOPHICAL PRINCIPLES UNDERLYING OUTCOME-BASED PRACTICE

1. Almost all students are capable of achieving excellence in learning the essentials of formal schooling.

2. Success influences self-concept; self-concept influences learning and behavior.

3. The instructional process can be changed to improve learning.

4. Schools can maximize learning conditions for all students by **applying research findings regarding effective schools, such as:**

   a. establishing a school climate which continually affirms the worth and diversity of all students;
   b. specifying expected learning outcomes;
   c. expecting that all students perform at high levels of learning;
   d. ensuring that all students experience personal success;
   e. varying the time for learning according to needs of each student and

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complexity of the task;
f. having staff and students both take responsibility for successful learning outcomes;
g. determining instructional assignment directly through continuous assessment of student learning; and
h. certifying educational progress whenever demonstrated mastery is assessed and validated.

OPERATIONAL ESSENTIALS OF OUTCOME-BASED SCHOOLS

In operation, Outcome-Based Education is a comprehensive approach, involving all elements which affect learning achievement. This includes the elements of effectiveness identified by research and practice, such as: leadership, planning, community participation, climate, development of aligned curriculum, instructional delivery system (assuring that each student has prerequisite skills for any learning undertaken, and does not already know what is being worked on), instruction (aligned mastery teaching), achievement assessment and monitoring (computerized information management system), staffing and training, and logistical support (facilities, furnishing, equipment, materials, etc.).

Outcome-Based Education is data-driven in that decisions and program design are screened for appropriateness by using a data base of research information about effective educational practice, with the data base continually updated as more current data and knowledge emerge and become part of the accepted professional literature.

At least the following program components must be present in order to implement an authentic Outcome-Based learning system:

1. Publicly determined and stated learning outcomes for all students.

2. Derived from these learning outcomes, a criterion-referenced assessment system which documents, records, reports, and awards credit for student attainment.

3. Derived from these learning outcomes, objectives-based core and alternative curricula.

4. (**Mastery Learning**). Derived from these learning objectives, a systematic process for planning and providing instruction appropriate to each student and for engaging the student until learning outcomes are attained. This systematic mastery process includes:

   a. assessing current student skills/learning for instructional assignment;
   b. analyzing the content of each objective so instructional strategies match assessment;
   c. when appropriate, sequencing tasks into a hierarchy of learning skills to maximize effectiveness of instructional delivery;
   d. orienting students to objectives(s) to be learned;
   e. teaching initially to objective(s), providing varied approaches, adequate practice time, and multiple opportunities for learning and success;
   f. assessing student mastery of objective(s) to determine progress and the need for movement to a new instructional objective, for extension/enrichment, or for correctives;
   g. for those who attain mastery, progressing to the next objective or offering extension/enrichment; and
   h. for those who do not attain mastery, providing correctives, using different teaching strategies, until outcomes are attained.

5. A criterion-referenced information management system at the classroom and building levels for coordinating timely instructional planning, student assessment and placement, instructional delivery, and program evaluation.

6. An evaluation/certification system which allows students to demonstrate and receive credit for improved levels of performance at any time.

7. A program evaluation component which guides instructional planning by comparing the learning outcomes of program graduates with the performance demands of post-school roles.

prepared by the Southeastern Education Service Center, Price, Utah 2/25/85

WHITEHORSE HIGH SCHOOL'S
O.B.E. MATH (GENERAL MATH)

Whitehorse High School (7-12), located at Montezuma Creek in San Juan School District, has installed a program of General Math which utilizes an outcome-based approach. This program is particularly needed at Whitehorse because many of the students have not achieved the prerequisite learning for high school courses in advanced mathematics. The OBE General Math thus provides for filling the normal requirements of grades 7-9 in General Math, while also providing for older students to develop the knowledge base required to succeed in advanced math courses.

Work on this program was initiated following the OBE Workshop conducted in Moab, Utah March 1-3, 1984 for Southeastern Utah schools. It was a grass roots movement, originating with teachers, with math specialist Gary Guymon being the chief catalyst and worker. Further information and training was obtained by participants in the Rural Schools Workshop, held August 13-17, 1984 at Snow College in Ephraim, at the National OBE Conferences held in November 1984 and January 1985 at Salt Lake City, and in the Mastery Learning workshops conducted by Carol Barber in Southeastern districts from October 1984 through January 1985 as part of a regional productivity project.

No attempt will be made here to describe the program in detail, but the elements we have observed will be listed briefly to indicate how fully the program has adopted the OBE principles.

LEADERSHIP

* The District Board of Education adopted policy supporting an outcome-based approach.
* Leadership for OBE math originated with the math department head.
* The program has been supported at critical points by the Principal, Assistant Principal, Assistant Superintendent, Superintendent.

PLANNING

* The entire staff of the High School has worked together in cooperative planning and problem solving.
* Desire to plan similar programs for other Whitehorse departments/subjects has been motivated.

COMMUNITY PARTICIPATION

* Community renorming is occurring gradually, as parents inquire about the new program.

CLIMATE

* Students are achieving more learning, experiencing more success, and feeling better about themselves and about the school.
* Students like the program better.
* Teachers like the program better, especially as they see the increase in student learning achievement.

CURRICULUM DEVELOPMENT

* Curriculum is aligned (outcomes, methods, tests are congruent).

Outcomes

* Overall curriculum is defined by a sequence of 102 unit objectives, in a continuum from introductory math to pre-algebra (K-12 General Math).
* Each unit is further defined by a series of sub-objectives.
* Outcomes are made public.
* Open disclosure statements are prepared to define graduation requirement.
* Graduation requirements for General Math are listed in terms of competencies.

Instructional Methods

* A Unit Guide is prepared for each unit, containing information about concepts and instructional methodology.
* Mastery Learning principles are applied to the methodology ideas, with mastery expected of all students.

Testing

* Completion/Summative tests are prepared by the math specialist (dept. head).
* Teachers may prepare and utilize formative tests as needed.
* Tests are criterion-referenced, aligned to the unit objective(s).

INSTRUCTIONAL DELIVERY SYSTEM

* All teachers teach math, each teaching one unit only, for a period of several weeks.
* Math is taught by all teachers during a specified period, five double periods during each two-week cycle.
* Continuous progress; ungraded.
* A student goes for testing when he/she feels ready to meet the objectives.
* Upon successfully passing a unit test, a student is immediately assigned to a new unit.
* Grading is: (1) 0-79% = I (incomplete); 80-100% = A.
* Credit is based on an accumulation of percentages assigned to each unit.

INSTRUCTION/TEACHING

* Mastery Learning principles are applied; for example:
  Students are required to have achieved prerequisite skills.
  It is expected that all students will achieve at the mastery level.
  The ML cycle of teach, test, reteach (with correctives) is used.
  Instruction is aligned (objective, teaching, and testing are congruent).
* Teachers teach to the objective, eliminating irrelevant material/activities.

ACHIEVEMENT MONITORING

* A testing center is established in the library, so that testing for credit is not done by teachers.
* A computer program has been developed to provide precisely the assistance needed in tracking student achievement and reassigning to new units.

STAFFING

Organization and Roles

* All teachers are assigned as math teachers.
* Math department head coordinates planning and problem-solving, records student achievement, and reassigns students to new units.
* The testing center is operated by an instructional aide. [?]

Training

* Staff has participated in OBE and Mastery Learning training.
* The most successful teachers (in terms of student achievement) assist other teachers learn how to instruct most effectively.

LOGISTICS

&&&